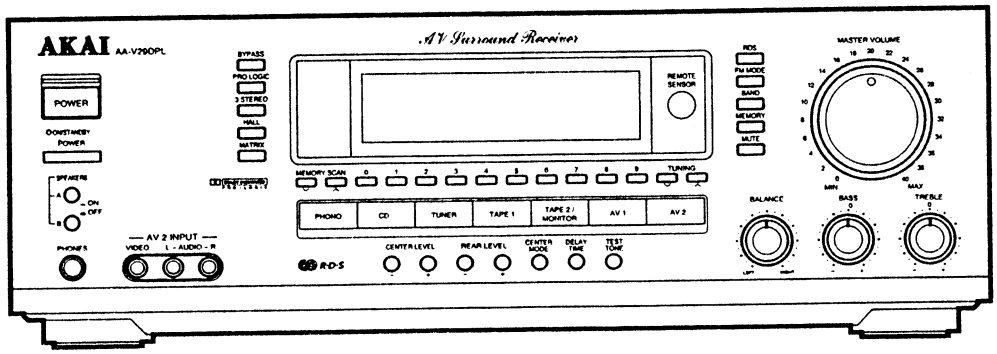
AKAI SERVICE MANUAL



AV SURROUND STEREO RECEIVER

SPECIFICATION

MODEL:AA-V29DPL

AMPLIFIER

1. When SURROUND is "OFF"

Sensitivity and Impedance
PHONO:2.5mV/47kΩ
CD,TAPE,AV:180mV/47kΩ

Frequency Response
PHONO(RIAA STANDARD CURVE)
:50Hz ~ 15KHz(±1dB)
CD,TAPE,AV:30Hz ~ 75KHz

Signal to Noise Ratio
PHONO (IHF-A) :65dB
CD,TAPE,AV (IHF-A) :85dB

Power Output
80W,1KHz,8ohm,0.5% THD

2. When SURROUND is "ON"

(4 Ch surround mode)

Power Output
Front : 50 + 50W (1KHz,0.1% THD,8ohm)
Rear : 15 + 15W (1KHz,0.5% THD,8ohm)

3. When Dolby Pro Logic is "ON"

Power output
Front : 50 + 50W (1KHz,0.1% THD,8ohm)
Center : 50W (1KHz,0.1% THD,8ohm)
Rear : 15 + 15W (1KHz,0.5% THD,8ohm)

TUNER

1. FM SECTION

Frequency Range : 87.50MHz to 108.00MHz
(50KHz step)
Sensitivity(S/N 30dB) : 3.0μV
Total Harmonic Distortion
MONO:0.2%, STEREO:0.5%
Signal to Noise Ratio
MONO:65dB, STEREO:60dB
Frequency Response : 20Hz ~ 15KHz
Image Rejection : 60dB
Stereo Separation(1KHz) : 40dB

2. AM SECTION

Frequency Range :
522KHz to 1620KHz(9KHz step)
Sensitivity(S/N 30dB) : 60dB
Total Harmonic Distortion : 2%
Signal to Noise Ratio : 40dB
Image Rejection : 35dB

GENERAL

Power comsumption : 170W
Power supply : 230V, 50Hz
Dimension(W x H x D) : 425 x 145 x 394 mm
Weight : 9.35Kg

Standard accessories

Remote control unit.....1
Operator's manual.....1

※ Because we continually strive to improve our products, we reserve the right to alter specifications with notice.

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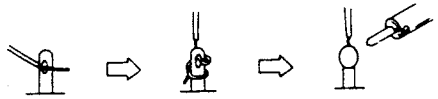
SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identifide by the △ (•)symbol parts are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specifide replacements.
   Examples :RF converters, tuner units, antenna selectswitches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially :
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers(insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Make sure that wires to do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.

Please leave them at an appropriate depot. All other household batteries can be thrown out with the household waste.

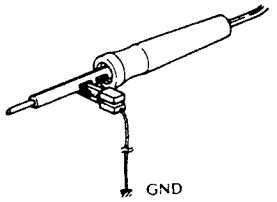
SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resister of 1500 ohms paralleled with a 0.15 μF capacitor, under the unit's normal working conditions.
The leakage-current should be less than 0.5mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2M Ohms.

PRECAUTIONS IN REPAIRING

When repairing or adjusting the unit, please note the following points.

1. Do not put excessive pressure on the mechanical part (operation part), including the pick-up block, as extremely high mechanical precision is required in these parts.
2. When the base is removed for repair adjustment, make sure that there are no metal obiects in the narrow gap between the P. C. board or the mecha parts and the base
3. The Micro-Computer and the CD signal processing ICs can be damaged by static electricity or leakage from a soldering iron during repairing. While soldering, please take the precautions against leakage as in the illustration.



4. Do not loosen any screws in the pick-up block. When handing the pick-up block, please refer to the points to NOTE when replacing the pick-up block.
5. Keep safety for hazardous invisible Laser Radiation, DO NOT watch the Laser Beam (Objective lens) directly.
6. Models for some countries, laser warning labels are affixed on the unit and inside of the unit, as shown below. Read it carefully for your safety, when repairing or adjusting the unit.

INFORMATION

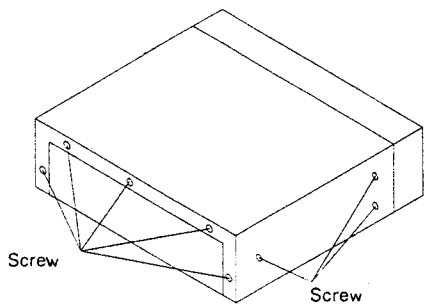
SYMBOLS FOR PRIMARY DESTINATION

Primary destination of units are indicated with the following alphabet.

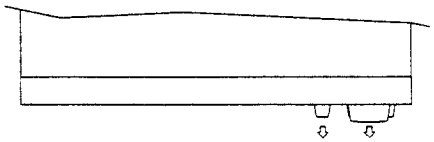
Symbols	Principal Destinations
B	UK
E	Europe (except UK)
S	Australia
U	Universal Area
Y*	Custom version

Ⅰ. DISASSEMBLY

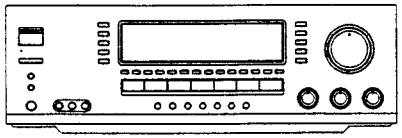
1) REMOVAL OF TOP COVER

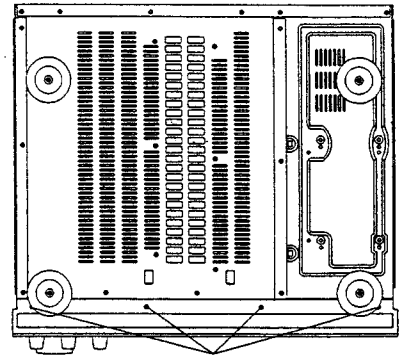


2) REMOVAL OF FRONT PANEL

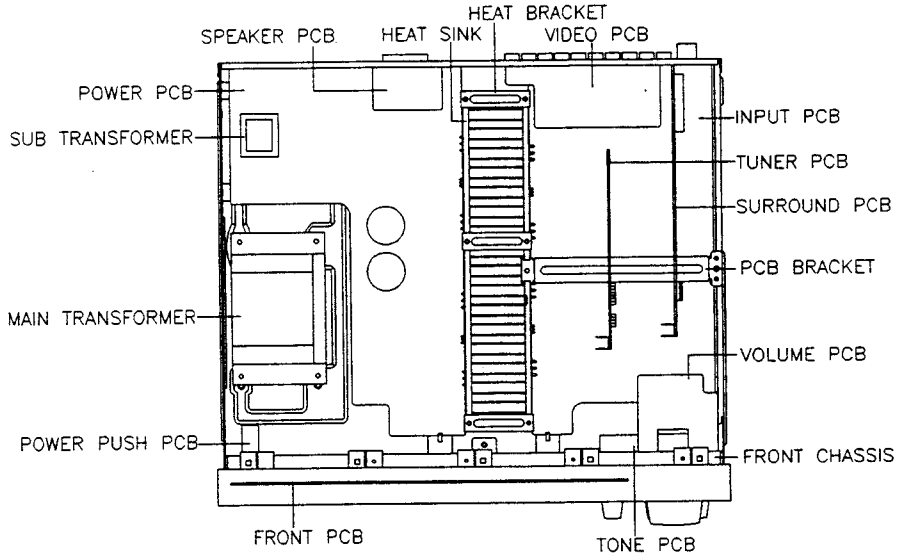


Remove the volume knob and the tone knob by pulling





Ⅱ. PRINCIPAL PARTS LOCATION



Ⅲ. MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUTIONS

EQUIPMENT NEEDED:

AM Signal Generator
FM Signal Generator
Oscilloscope
VTVM (AC,DC)
Test loop antenna (AM Adjustment)
Dummy antenna (FM Adjustment)
Stereo signal modulator (RDS IN)

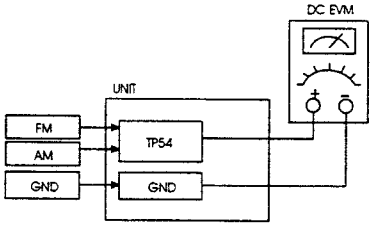
IMPORTANT

1. Check power-source voltagd.
2. Set the function switch to band aligned.
3. Keep the signal input as low as possible to adjust accurately.
4. Modulation and modulation frequency.

Item / Band	Modulation	Modulation frequency
AM	30%	400Hz
FM	100% (75KHz Dec.)	400Hz

1. TUNING FREQUENCY RANGE ADJUSTMENTS

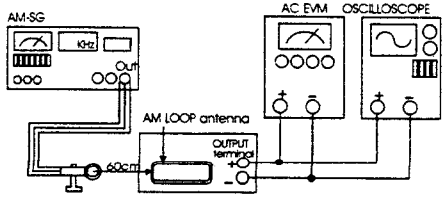
(FM,AM) DC VOLTMETER ..... CONNECT TO TEST POINT TP54 AND GND



NO	Band	Frequency	Adjust for	Adjustment
1	FM	87.50MHz	1.5V	L7
2	AM	522KHz	1V	L502

2. AM TRACKING ADJUSTMENT

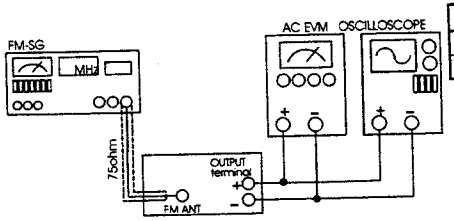
Signal Generator ..... Connects to the AM ANT. Coil through the loop antenna.
Adjust for the indication of VTVM of the wave form scope to be maximum.



Band	Step	Frequency	Adjust for	Adjustment
AM	1	612KHz	Maximum sensitivity	L501,L502
	2	1503KHz	Maximum sensitivity	CT51
	3		Repeat steps 1 and 2 several times	

3. FM RF ADJUSTMENT

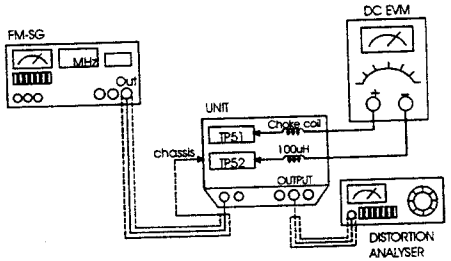
Signal Generator ..... Connects to the FM ANT JACK(FM IN) through the dummy.



No.	Frequency	Adjust for	Adjustment
1	87.50MHz	Maximum sensitivity	L2,L5,L6
2	Repeat steps 1 and 2 several times		

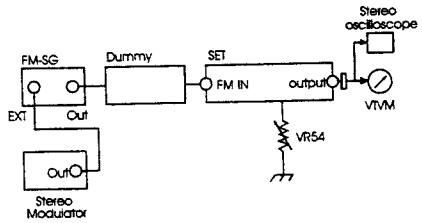
4. FM MONO DISTORTION ADJUSTMENT

DC VOLTMETER ..... CONNECT TO TP51(-),TP52(+) Through the choke coil(100uH)
Signal Generator ..... Connects to the FM ANT JACK(FM IN) through the dummy.
Distortion Meter..... Connect to the output.



No.	Frequency	Adjust for	Adjustment
1	100.10MHz	DC Voltmeter 0V	T501
2	100.10MHz	Minimum T.H.D.	T502
3	Repeat steps 1 and 2 several times		

5. FM STEREO SEPARATION



Pilot signal	Adjust for	Adjustment
ON	Different of R or L must be maximum	VR54

NOTE : In case of adjusting the stereo separation of input is L(or R) channel,R (or L) channel must be maximum.

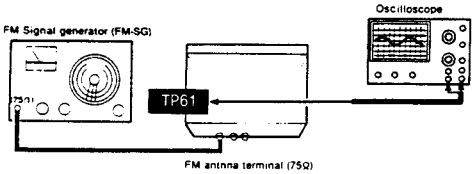
6. FM/AM AUTO STOP LEVEL ADJUSTMENT

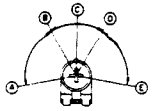
FM Signal Generator ..... Connect to the FM ANT JACK(FM IN) through the dummy.
Signal Generator ..... Connect to the AM ANT. Coil through the loop antenna.

Band	Step	Frequency	Adjust for		Adjustment
FM	1	100.1MHz, 35dB	TUNED	Display OFF	VR52
	2	100.1MHz, 35dB	TUNED	Display ON	VR52
AM	1	999KHz, 80dB	TUNED	Display OFF	VR51
	2	999KHz, 80dB	TUNED	Display ON	VR51

7. FM RDS ADJUSTMENT

FM Signal Generator(RDS IN) ..... Connect to the FM ANT JACK(FM IN) through the dummy.
Oscilloscope..... Connect to TP53(+) GND(-)

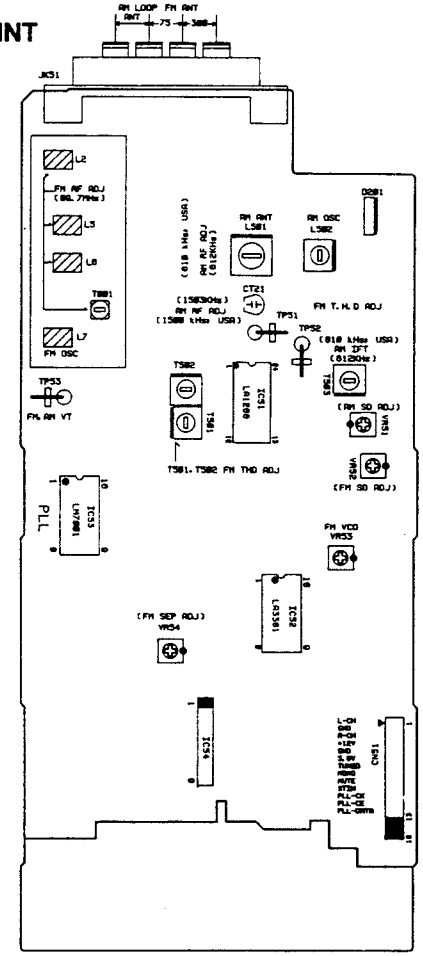




VR62

A-B,D-E : RDS OFF position.
B-D : RDS ON position.(indicator lighting)
C : Adjust point of RDS circuit.
(TP53:1.0 ~ 1.2V)

ADJUSTMENT POINT



IC PIN FUNCTION (IC : ANAM1174M)

PIN No.	PIN NAME	I/O	DESCRIPTION
1	VDD	-	Power supply (+5V)
2 ~ 5	OPTION	I	Devices option port
6	TUNER MUTE	O	Tuner mute on/off control output
7	MONO	I	MONO control input
8	RDS MUTE	O	RDS mute on/off control output
9	FUNCTION MUTE	O	Function mute on/off control output
10	N.C	-	Non connection
11	RDS DATA	O	RDS data output
12	N.C	-	Non connection
13	RDS CLOCK	O	RDS clock output
14	STEREO IN	I	Stereo in control input
15	TUNED	I	Tuned control input
16	PROTECT IN	I	Input form protection circuit
17 ~ 21	KEY MATRIX	I	Key MATRIX ports
22	VSS	-	GND
23	AVSS	-	GND
24	VAREF	-	A/D convertor reference voltage
25	VDD	-	Power supply (+5V)
26	BACK UP	I	Back-up mode control input
27	TEST	-	GND
28,29	N.C	-	Non connection
30	VSS	-	GND
31	XIN	I	8MHz Crystal connecting terminal
32	XOUT	O	8MHz Crystal connecting terminal
33	RESET	I	System reset pulse input
34	REMOTE IN	I	Remote control signal input
35		-	
36		-	
37	POWER ON/OFF	O	Power on/off control output
38	SURROUND ON/OFF	O	Surround on/off control output
39	-20dB MUTE	O	-20dB mute on/off control output
40		-	
41	SURROUND CLOCK	O	Surround clock output
42	PLL CE	O	PLL CE output
43	STROBE	O	STROBE output
44	REQ	O	REQ output
45	CLOCK	O	CLOCK output
46	DATA	O	DATA output
47	AV2 CONTROL	O	AV2 Video function control output
48	AV1 CONTROL	O	AV1 Video function control output
49	CD CONTROL	O	CD Video function control output
50	VFLP	-	(-33V) Negative power supply for FIP blinking
51 ~ 74	SEGMENT	O	FIP SEGMENT control outputs
75 ~ 89	GRID	O	FIP grid control outputs
90	N.C	-	Non connection
91	VR UP	O	Volume UP control outputs
92	VR DOWN	O	Volume DOWN control outputs
93	VR LED	O	Volume LED ON/OFF control outputs
94	POWER LED	O	Power LED ON/OFF control outputs
95 ~ 98	N.C	-	Non connection
99,100	SEGMENT	O	FIP SEGMENT control outputs

ACTIVE DEVICES VOLTAGE

TEST CONDITION

- Function : CD (No signal)
- Surround mode : OFF (BYPASS)
- Unit : V

Ref. No.	E	C	B	Ref. No.	E	C	B
Q1,Q2	0	0	-11.7	Q713,Q714	-0.6	-54.4	-1.1
Q101,Q103	0	0	-11.7	Q715,Q716	0	57.3	0.6
Q102,Q104	0	0	-11.9	Q717,Q718	0	-57.3	-0.6
Q105,Q106	0.6	-52.6	0	Q719,Q720	0	0	-11.7
Q107,Q108	0.6	-52.6	0	Q721,Q722	0	0	-11.9
Q109,Q110	-1.1	1.2	-0.5	Q723,Q724	0	11.7	0
Q111,Q112	-53.1	-0.6	-52.6	Q725	11.8	0	11.8
Q113,Q114	-53.1	-1.1	-52.6	Q726	0	11.5	0
Q115,Q116	0.6	54.4	1.2	Q727	0	11.7	0
Q117,Q118	-0.6	-54.4	-1.1	Q728	0	11.7	0
Q119,Q120	0	57.3	0.6	Q729	0	1.1	0
Q121,Q122	0	-57.3	-0.6	Q730	12	0	12
Q123,Q124	0	11.7	0	Q801	55	57	55.6
Q125	12	0	12	Q802	57	56	55
Q126	0	12	0	Q803	0	0	0.6
Q127	0	12	0	Q804	-55	-57	-55.6
Q128	12	0	12	Q805	-57	-56	-55.7
Q130	0	11.7	0	Q806	12	-53	0
Q131,Q132	0	0	2.1	Q807	0	12	11.4
Q261,Q262,Q263	3.2	0	2.6	Q808	0	0	0.6
Q264,Q265,Q266	3.7	2	3.1	Q901	5.6	5.6	5
Q701,Q702	0.6	-52.6	0	Q902	0	4.9	0
Q703,Q704	0.6	-52.6	0	Q904	4.5	0	4.5
Q705,Q706	-53.1	-0.6	-52.6	Q905	5	0	5
Q707,Q708	-53.1	-1.1	-52.6	Q908	5	5	0
Q709,Q710	-1.1	1.2	-0.5	Q909	0	0	5
Q711,Q712	0.6	54.4	1.2	Q910	0	5.6	0

IC27		
PIN No.	DESCRIPTION	VOLTAGE
1	IN/OUT 1	0
2	OUT/IN 1	2.6
3	OUT/IN 2	2.6
4	IN/OUT 2	0
5	CONT 2	0
6	CONT 3	0
7	VSS	0
8	IN/OUT 3	0
9	OUT/IN 3	2.6
10	OUT/IN 4	2.6
11	IN/OUT 4	0
12	CONT 4	0
13	CONT 1	0
14	VCC	6

IC1,IC4,IC31,IC32,IC35		
PIN No.	DESCRIPTION	VOLTAGE
1	A OUTPUT	0
2	A - INPUT	0
3	A + INPUT	0
4	VEE	-11.7
5	B + INPUT	0
6	B - INPUT	0
7	B OUTPUT	0
8	VCC	11.7

IC42		
PIN No.	DESCRIPTION	VOLTAGE
1	RLC2	4
2	RLC1	4
3	RLC4	3.6
4	RLC7	3.6
5	RLC3	4
6	RLC8	4
7	RLC6	3.4
8	LLI	4
9	LBPF	4
10	RLI	4
11	RBPF	4
12	LT	4
13	RT	4
14	LIN	4
15	RIN	4
16	HOLDC	4
17	VCC	10
18	NGC3	4
19	NGC2	4
20	NGC1	2.5
21	VDD	4.8
22	DATA	DATA
23	SCK	SCK
24	REQ	REQ
25	IDS	0
26	VSS	0
27	LOUT	4
28	ROUT	4
29	CT	4
30	COUT	4
31	ST	4
32	SOUT	4
33	CMC	4
34	SMRO	4
35	SMRI	4
36	SD	4
37	SIMB	4
38	SIMA	4
39	L+R	4
40	L-R	4
41	GND	0
42	VREF	4
43	VREFG	4
44	IREF	1.4
45	DBIN	4
46	LPIN	4
47	DBC1	4
48	DBC2	4
49	DBC3	0
50	PSC3	4
51	PSC6	4
52	PSC2	4
53	PSC5	4
54	PSC1	4
55	PSC4	4
56	RLC5	3.4

IC2,IC3		
PIN No.	DESCRIPTION	VOLTAGE
1	VEE	-12
2	L1/L1	0
3	L2/L2	0
4	L3/LCOM1	0
5	L4/L3	0
6	LCOM1/L4	0
7	LS/LCOM2	0
8	L6/L5	0
9	LCOM2/L6	0
10	L7/LCOM3	0
11	L8/L7	0
12	LCOM3/LCOM4	0
13	STROBE	STROBE
14	GND	0
15	CK	CK
16	DATA	DATA
17	RCOM3/RCOM4	0
18	R8/R7	0
19	R7/RCOM3	0
20	RCOM2/R6	0
21	R6/R5	0
22	R5/RCOM2	0
23	RCOM1/R4	0
24	R4/R3	0
25	R3/RCOM1	0
26	R2/R2	0
27	R1/R1	0
28	VDD	11.7

IC43		
PIN No.	DESCRIPTION	VOLTAGE
1	VDD	4.7
2	XIN	1MHz
3	XOUT	1MHz
4	REQ	REQ
5	SCK	SCK
6	DATA	DATA
7	IDSW	0
8	IDFLAG	4.7
9	TEST1	0
10	TEST2	0
11	DGND	0
12	AGND	0
13	LPF2OUT	2.4
14	LPF2IN	2.4
15	OP2OUT	2.4
16	OP2IN	2.4
17	CC2	0.7
18	CC1	0.7
19	PEF	2.4
20	OP1IN	2.4
21	OP1OUT	2.4
22	LPF1OUT	2.4
23	LPF1IN	2.4
24	VCC	4.7

IC54		
PIN No.	DESCRIPTION	VOLTAGE
1	VCC	10.4
2	A OUTPUT	5.2
3	A - INPUT	5.2
4	A + INPUT	5.2
5	VEE	0
6	B + INPUT	5.2
7	B - INPUT	5.2
8	B OUTPUT	5.2
9	VCC	10.4

IC81		
PIN No.	DESCRIPTION	VOLTAGE
1	INPUT	18.3
2	GND	0
3	OUTPUT	12

IC82		
PIN No.	DESCRIPTION	VOLTAGE
1	GND	0
2	INPUT	-20
3	OUTPUT	-12

IC83		
PIN No.	DESCRIPTION	VOLTAGE
1	INPUT	11.5
2	GND	0
3	OUTPUT	5

IC84		
PIN No.	DESCRIPTION	VOLTAGE
1	INPUT	10.3
2	GND	0.6
3	OUTPUT	5.6

IC92		
PIN No.	DESCRIPTION	VOLTAGE
1	VOUT	5
2	GND	0
3	VCC	5

IC93		
PIN No.	DESCRIPTION	VOLTAGE
1	OUT	5
2	VDD	5
3	GND	0

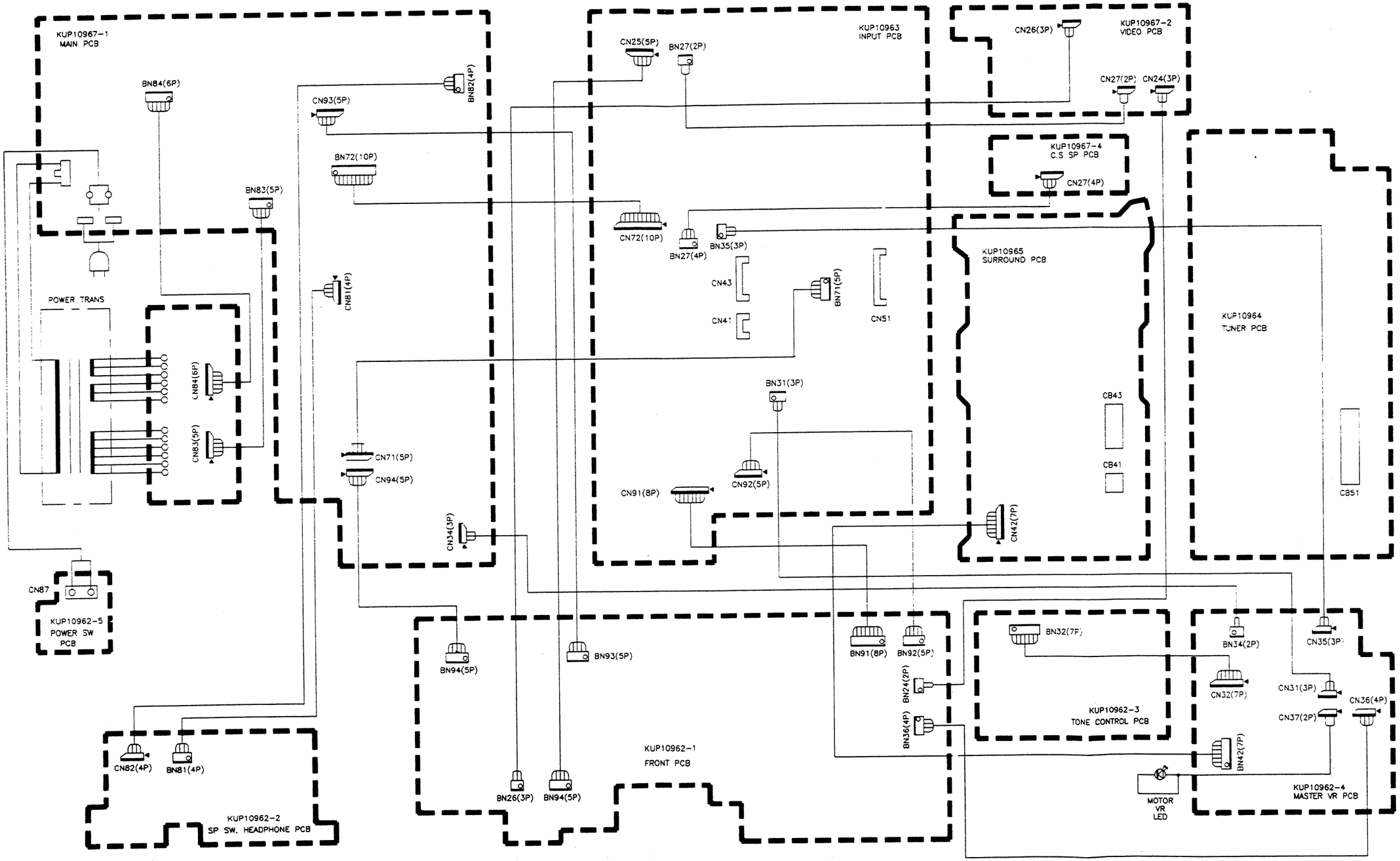
IC51			
PIN No.	DESCRIPTION	FM	AM
1	FM IF IN	2.4	1
2	IF BYPASS	2.4	1
3	IF BYPASS	2.4	1
4	GND	0	0
5	FM DET OUT	10.7	10.7
6	FM DET IN	10.7	10.7
7	VCC	10.7	10.7
8	TUNED	0	0
9	AFC	3.7	3.7
10	FM IF	N.C	
11	AM IF	N.C	
12	FM OUT	3.2	3.1
13	STRQ	N.C	
14	AM NARROW	1.2	1.2
15	AM OUT	1.5	2.0
16	FM ADJ	1.5	0.6
17	AM ADJ	0	1.2
18	AM DET IN	2.4	2.0
19	AM AGC	1.5	1.4
20	AM DET OUT	0	10.7
21	AM RF IN	3.9	3.6
22	V REG	3.9	3.6
23	AM OSC IN	3.9	3.6
24	AM OSC OUT	3.2	2.2

IC62 (RDS)		
PIN No.	DESCRIPTION	VOLTAGE
1	DK FILTER	1.6
2	Q - DET	1.5
3	RDS ADJ	N.C
4	I - DET	1.4
5	B.P.F CHECK	2.3
6	RDS IN	2.4
7	SK FILTER	2.8
8	RDS FILTER	1.2
9	PLL LOOP FILTER	1.5
10	PLL LOCP FILTER	0
11	FILTER ADJ	0.7
12	GND	0
13	DK - IND	N.C
14	SK - IND	N.C
15	RDS - IND	N.C
16	SK - ADJ	0
17	DATA OUT	DATA
18	CLOCK	CLOCK
19	D - PLL	1.5
20	INTEG/D	1.1
21	B.P.F	2.1
22	B.P.F	2.1
23	VCC	4.3
24	456KHz OSC	456KHz OSC

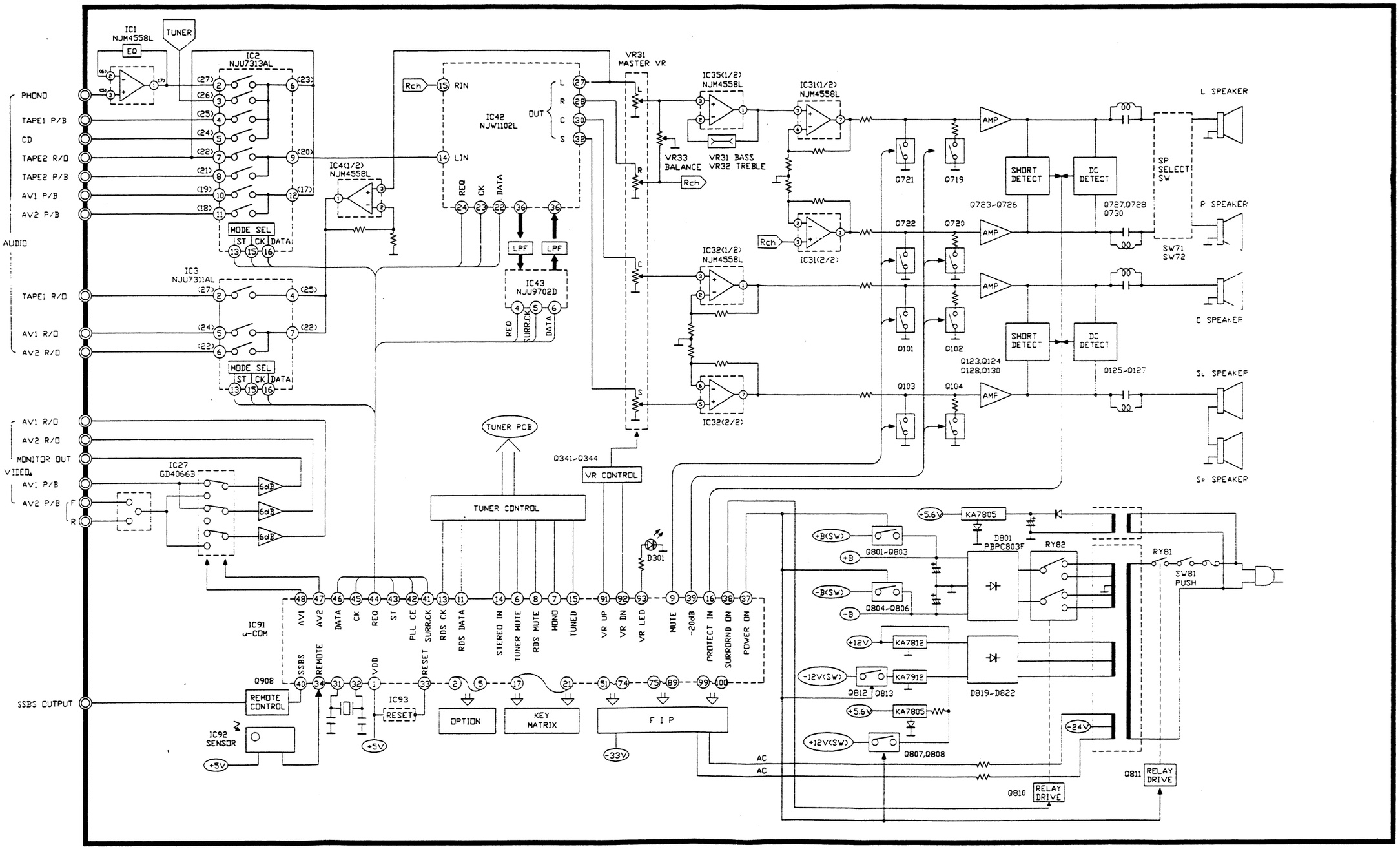
IC53			
PIN No.	DESCRIPTION	FM	AM
1	X IN	7.2MHz	
2	X OUT	7.2MHz	
3	CE	CE	
4	CL	CL	
5	DATA	DATA	
6	SYC	N.C	
7	OUT 1	N.C	
8	OUT 2	0	10.7
9	OUT 3	0	3.9
10	AM OSC IN	AM OSC	
11	FM OSC IN	FM OSC	
12	VDD 1	4.8	
13	VDD 2	4.8	
14	PD 1	N.C	
15	PD 2	1.2	
16	GND	0	

IC52		
PIN No.	DESCRIPTION	VOLTAGE
1	VCC	9.7
2	MPX IN	2.4
3	COMP. AMP OUT	1.7
4	L - OUT	1.5
5	R - OUT	1.5
6	STEREO LED	5
7	GND	0
8	SEPA. ADJ	0.5
9	VCO STOP	0.8
10	PILOT FILTER	1.4
11	PILOT FILTER	1.4
12	19KHz CHECK	1
13	PLL IN	1.4
14	PLL FILTER	1.4
15	PLL FILTER	1.4
16	VCO	0.8

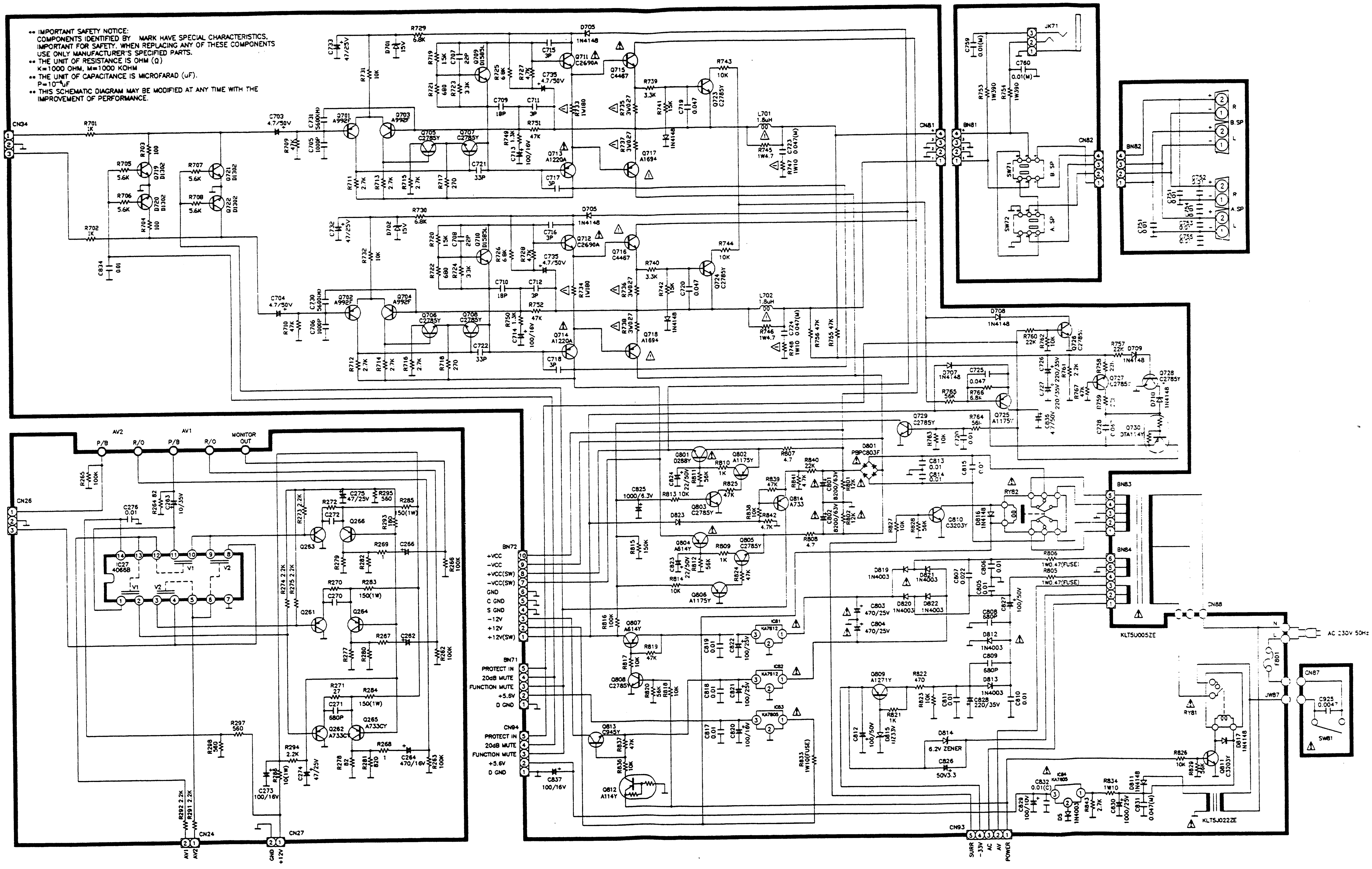
WIRING DIAGRAM



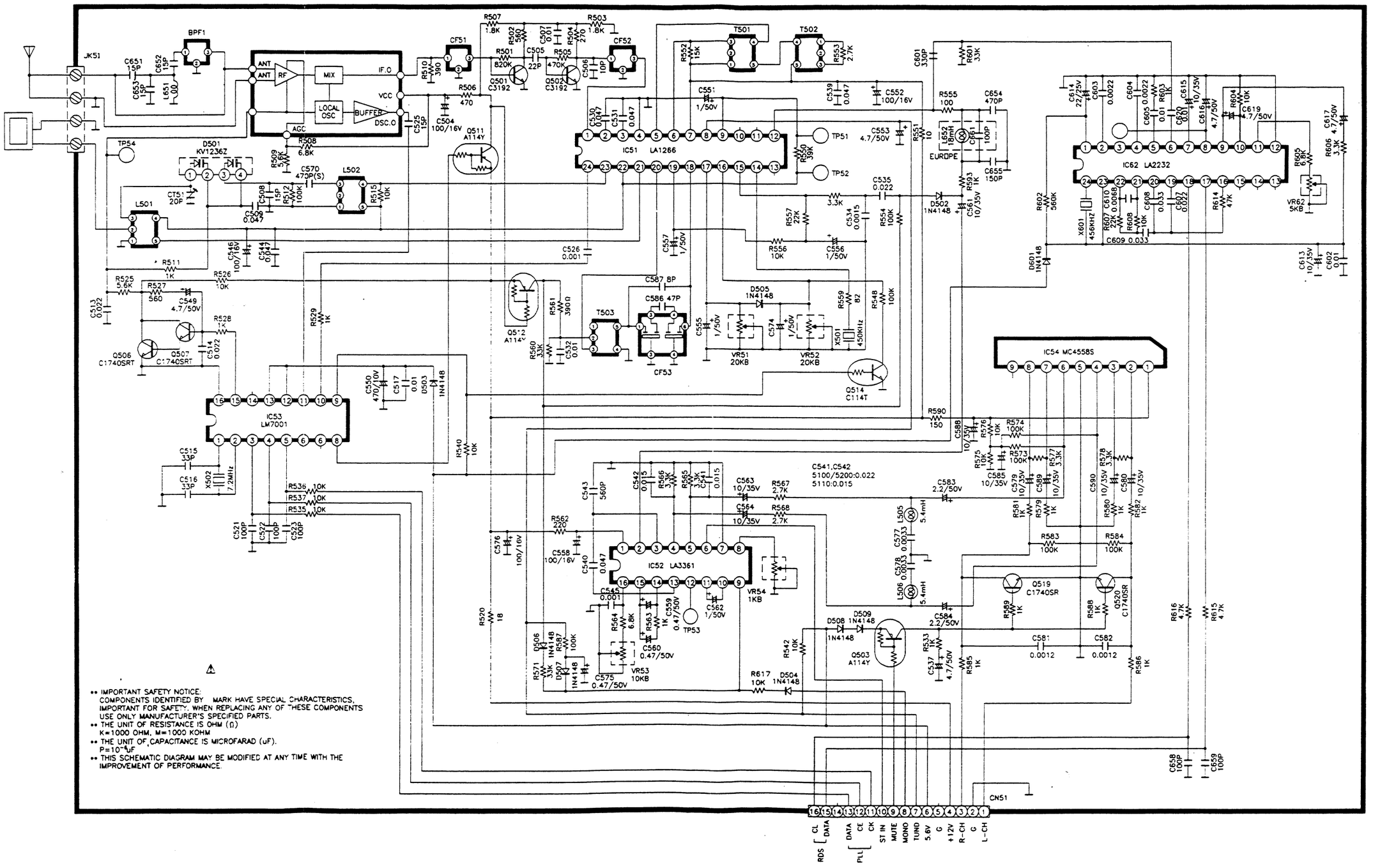
BLOCK DIAGRAM

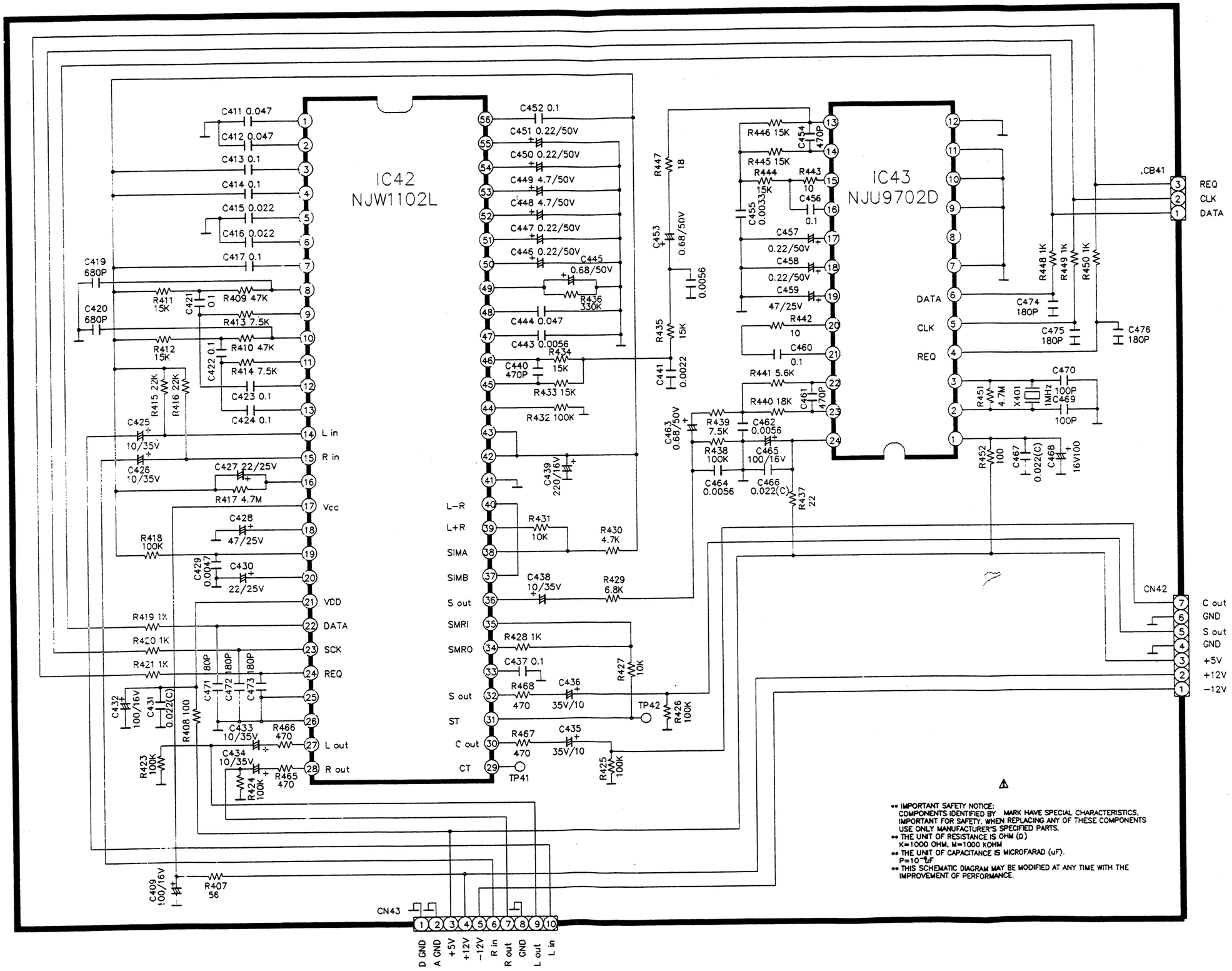


SCHEMATIC DIAGRAM



•• IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY MARK HAVE SPECIAL CHARACTERISTICS, IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY MANUFACTURER'S SPECIFIED PARTS.
•• THE UNIT OF RESISTANCE IS OHM (Ω)
K=1000 OHM, M=1000 KOHM
•• THE UNIT OF CAPACITANCE IS MICROFARAD (uF).
P=10⁻⁶uF
•• THIS SCHEMATIC DIAGRAM MAY BE MODIFIED AT ANY TIME WITH THE IMPROVEMENT OF PERFORMANCE.
CN34
AV2 P/B R/O
AV1 P/B R/O
MONITOR OUT
BN72
+VCC
-VCC
+VCC(SW)
-VCC(SW)
GND
C GND
S GND
-12V
+12V
+12V(SW)
BN71
PROTECT IN
20dB MUTE
FUNCTION MUTE
+5.6V
D GND
CN94
CN93
SURR
-33V
AC
AV
POWER
KLT5U005ZE
KLT5J022ZE
AC 230V 50Hz


JK51
BPF1
IC51 LA1266
IC52 LA3361
IC53 LM7001
IC54 MC4558S
IC62 LA2232
T501
T502
T503
CF51
CF52
CF53
D501 KV1236Z
D502 1N4148
D503 1N4148
D504 1N4148
D505 1N4148
D506 1N4148
D507 1N4148
D508 1N4148
D509 1N4148
D601 1N4148
L501
L502
X501 450KHz
X502 7.2MHz
X601 456KHz
VR51 20KB
VR52 20KB
VR53 10KB
VR54 1KB
VR62 5KB
Q501 C3192
Q502 C3192
Q503 A114Y
Q504 A114Y
Q506 C1740SRT
Q507 C1740SRT
Q511 A114Y
Q514 C114T
Q519 C1740SR
Q520 C1740SR
TP51
TP52
TP53
TP54
EUROPE
CN51
RDS CL DATA
PLL DATA CE CK
ST IN
MUTE
MONO
TUND
5.6V
G
+12V
R-CH
G
L-CH
C541,C542 5100/5200:0.022 5110:0.015
•• IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY ⚠ MARK HAVE SPECIAL CHARACTERISTICS.
IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS
USE ONLY MANUFACTURER'S SPECIFIED PARTS.
•• THE UNIT OF RESISTANCE IS OHM (Ω)
K=1000 OHM, M=1000 KOHM
•• THE UNIT OF CAPACITANCE IS MICROFARAD (uF).
P=10⁻⁶uF
•• THIS SCHEMATIC DIAGRAM MAY BE MODIFIED AT ANY TIME WITH THE
IMPROVEMENT OF PERFORMANCE.


IC42
NJW1102L
IC43
NJU9702D
C411 0.047
C412 0.047
C413 0.1
C414 0.1
C415 0.022
C416 0.022
C417 0.1
C419 680P
C420 680P
R411 15K
C421 0.1
R409 47K
R413 7.5K
R412 15K
R410 47K
C422 0.1
R414 7.5K
R415 22K
R416 22K
C423 0.1
C424 0.1
C425 10/35V
C426 10/35V
C427 22/25V
R417 4.7M
C428 47/25V
R418 100K
C429 0.0047
C430 22/25V
R419 1K
R420 1K
R421 1K
C471 180P
C472 180P
C473 180P
C432 100/16V
C431 0.022(C)
R408 100
C433 10/35V
R466 470
C434 10/35V
R465 470
R423 100K
R424 100K
C409 100/16V
R407 56
L in
R in
Vcc
VDD
DATA
SCK
REQ
L out
R out
C452 0.1
C451 0.22/50V
C450 0.22/50V
C449 4.7/50V
C448 4.7/50V
C447 0.22/50V
C446 0.22/50V
C445 0.68/50V
R436 330K
C444 0.047
C443 0.0056
R434 15K
C440 470P
R433 15K
R432 100K
C439 220/16V
R431 10K
R430 4.7K
C438 10/35V
R429 6.8K
R428 1K
C437 0.1
R427 10K
C436 35V/10
R468 470
R467 470
C435 35V/10
R425 100K
TP41
TP42
R426 100K
L-R
L+R
SIMA
SIMB
S out
SMRI
SMRO
S out
ST
C out
CT
R447 18
C453 0.68/50V
C443 0.0056
R435 15K
C441 0.0022
R446 15K
C454 470P
R445 15K
R444 15K
R443 10
C455 0.00333
C456 0.1
C457 0.22/50V
C458 0.22/50V
C459 47/25V
R442 10
C460 0.1
R441 5.6K
C461 470P
R440 18K
C463 0.68/50V
R439 7.5K
C462 0.0056
R438 100K
C465 100/16V
C464 0.0056
C466 0.022(C)
R437 22
DATA
CLK
REQ
R448 1K
R449 1K
R450 1K
C474 180P
C475 180P
C476 180P
C470 100P
C469 100P
R451 4.7M
X401 1MHz
R452 100
C467 0.022(C)
C468 16V100
CB41
REQ
CLK
DATA
CN42
C out
GND
S out
GND
+5V
+12V
−12V
CN43
D GND
A GND
+5V
+12V
−12V
R in
R out
GND
L out
L in
⚠
•• IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY ⚠ MARK HAVE SPECIAL CHARACTERISTICS, IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY MANUFACTURER'S SPECIFIED PARTS.
•• THE UNIT OF RESISTANCE IS OHM (Ω)
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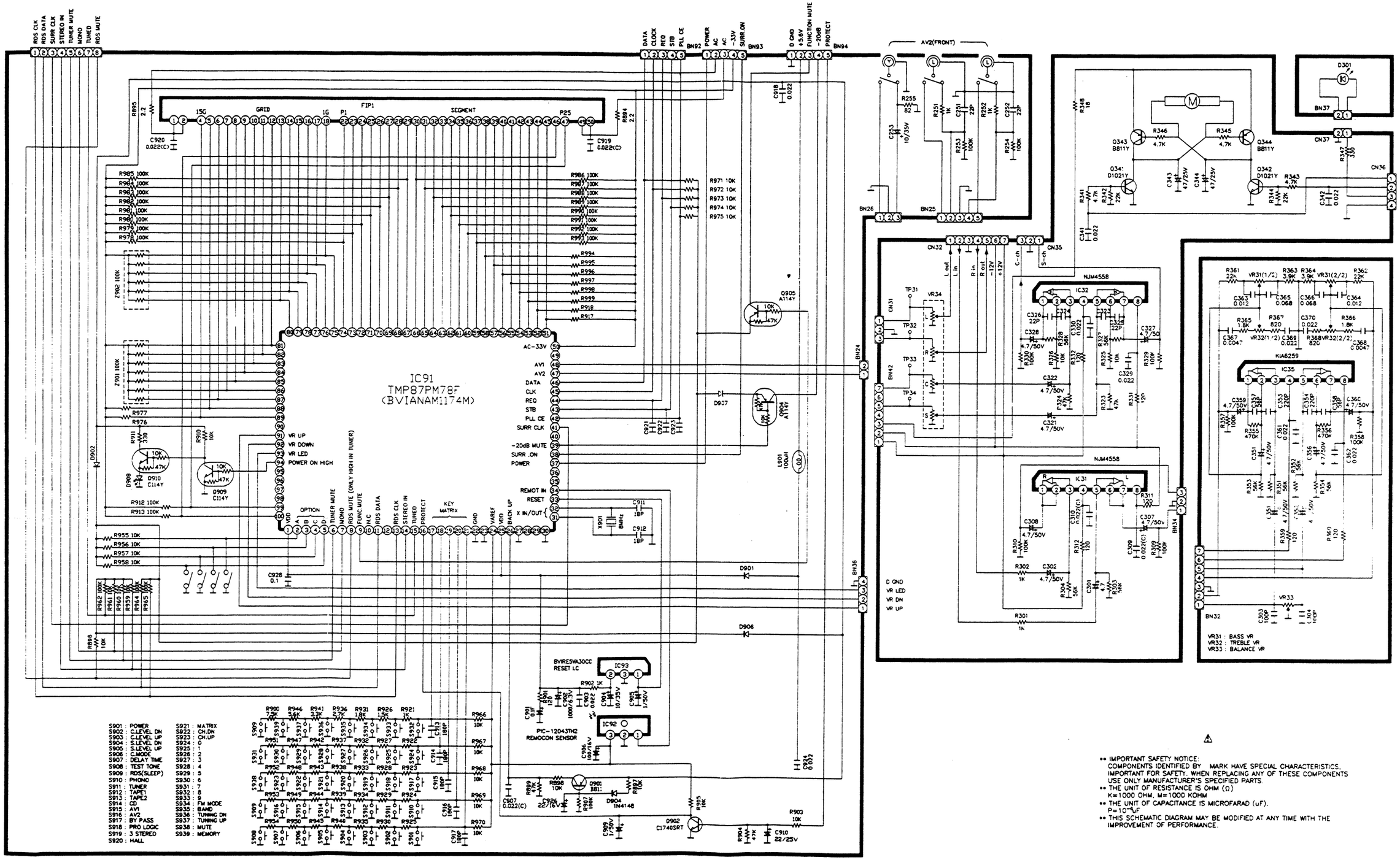
•• THE UNIT OF CAPACITANCE IS MICROFARAD (uF).
P=10⁻⁶uF
•• THIS SCHEMATIC DIAGRAM MAY BE MODIFIED AT ANY TIME WITH THE IMPROVEMENT OF PERFORMANCE.



⚠

** IMPORTANT SAFETY NOTICE:
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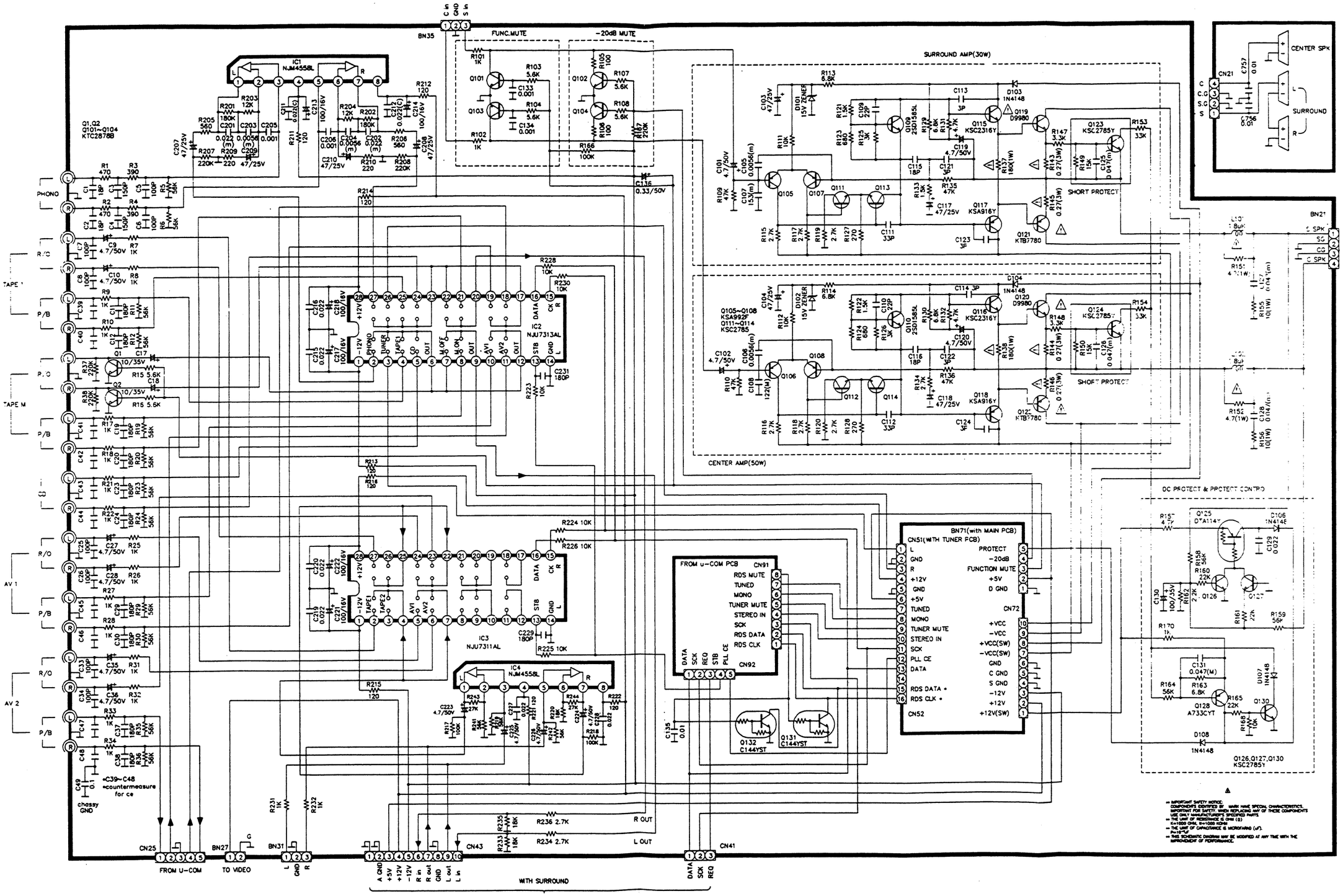
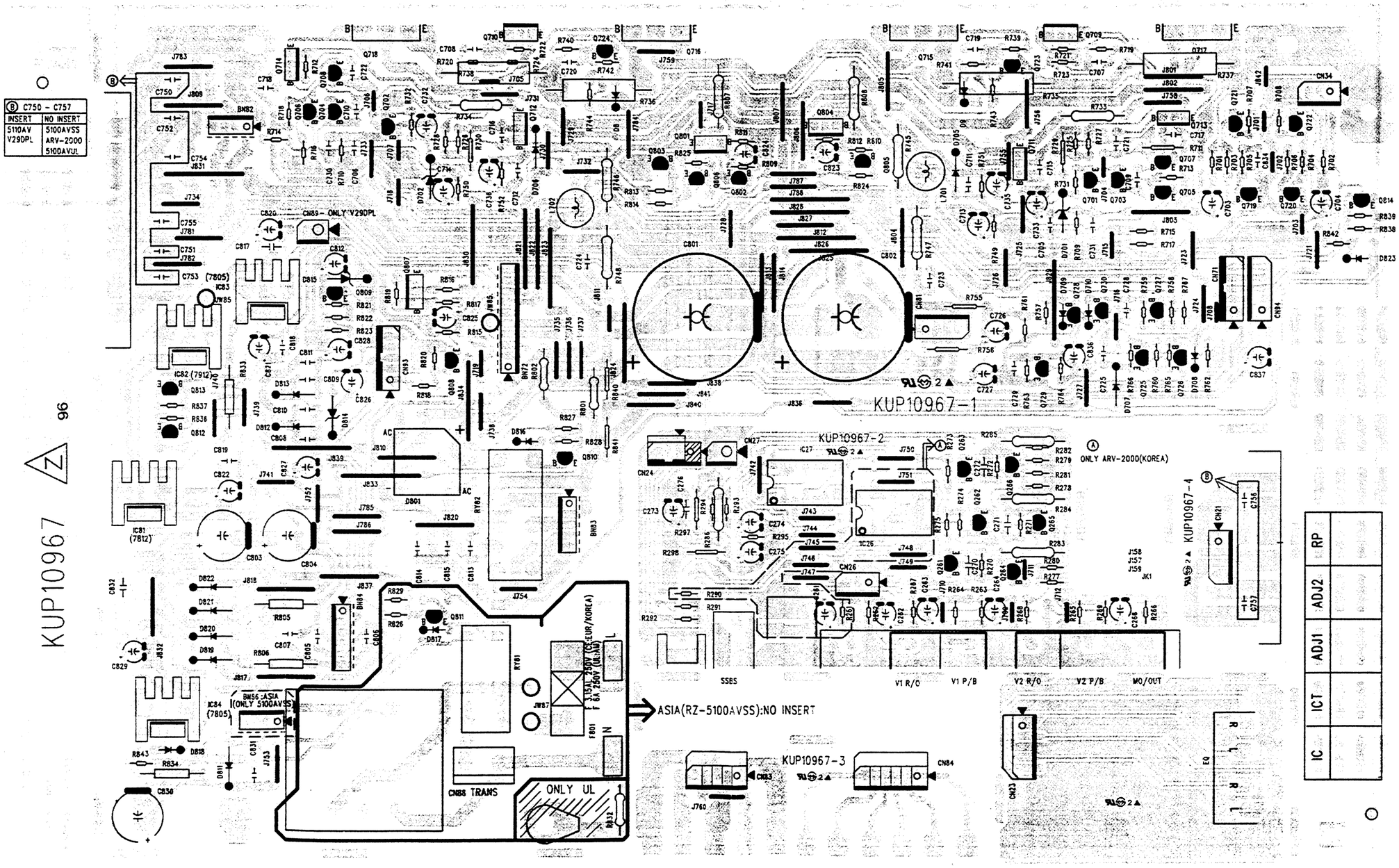
** THE UNIT OF CAPACITANCE IS MICROFARAD (uF).
P=10^{-6}uF
** THIS SCHEMATIC DIAGRAM MAY BE MODIFIED AT ANY TIME WITH THE IMPROVEMENT OF PERFORMANCE.

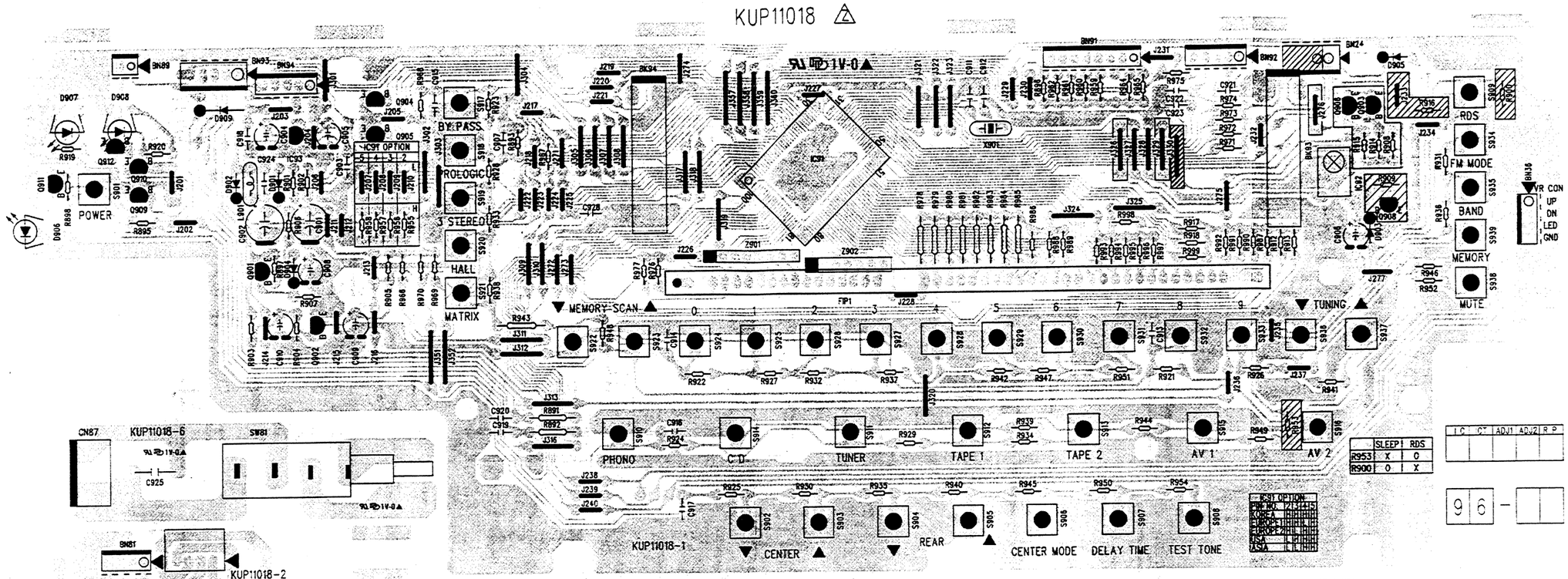

BN35
FUNC.MUTE
-20dB MUTE
IC1 NJM4558L
Q101~Q104 KTC2878B
SURROUND AMP(30W)
CENTER AMP(50W)
CN21
CENTER SPK
SURROUND
BN21
SHORT PROTECY
Q105~Q108 KSA992F
Q111~Q114 KSC2785
Q115 KSC2316Y
Q116 KSC2316Y
Q117 KSA916Y
Q118 KSA916Y
Q119 D9980
Q120 D9980
Q121 KTB7780
Q122 KTB7780
Q123 KSC2785Y
Q124 KSC2785Y
IC2 NJU7313AL
IC3 NJU7311AL
IC4 NJM4558L
PHONO
TAPE P
TAPE M
AV 1
AV 2
R/O
P/B
chassy GND
*C39~C48 *countermeasure for ce
FROM u-COM PCB CN91
RDS MUTE
TUNED
MONO
TUNER MUTE
STEREO IN
SCK
RDS DATA
RDS CLK
PLL CE
DATA
CN92
BN71(with MAIN PCB)
CN51(WITH TUNER PCB)
CN52
CN72
PROTECT
-20dB
FUNCTION MUTE
+5V
D GND
+VCC
-VCC
+VCC(SW)
-VCC(SW)
GND
C GND
S GND
-12V
+12V
+12V(SW)
DC PROTECT & PROTECT CONTRO
Q125 DTA114Y
Q126 A733CYT
Q127
Q128 A733CYT
Q130
Q131 C144YST
Q132 C144YST
D106 1N4148
D107 1N4148
D108 1N4148
Q126,Q127,Q130 KSC2785Y
CN25
FROM U-COM
BN27
TO VIDEO
BN31
CN43
CN41
R OUT
L OUT
WITH SURROUND

PRINTED CIRCUIT BOARDS

MAIN PCB

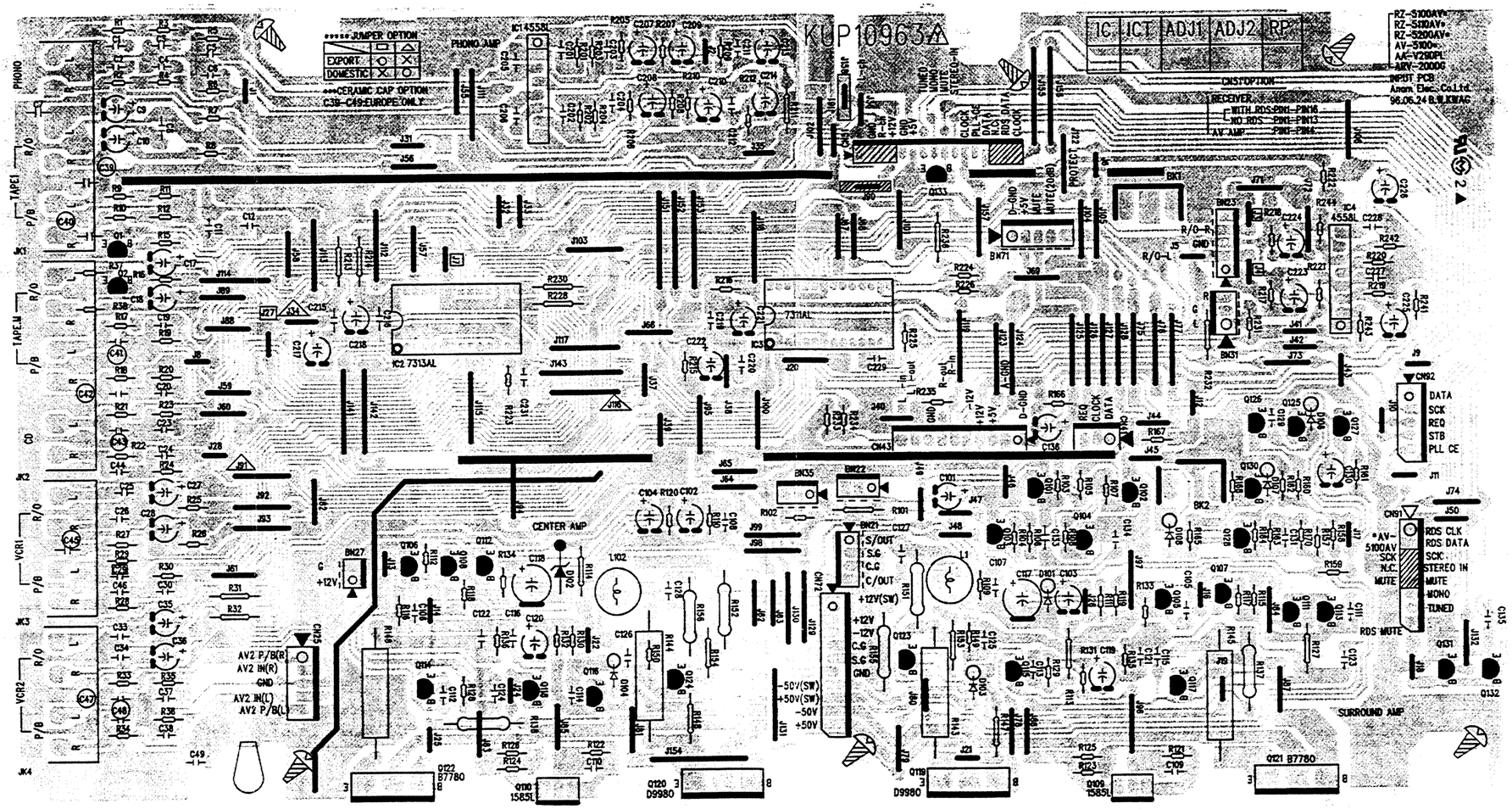


KUP11018 ⚠

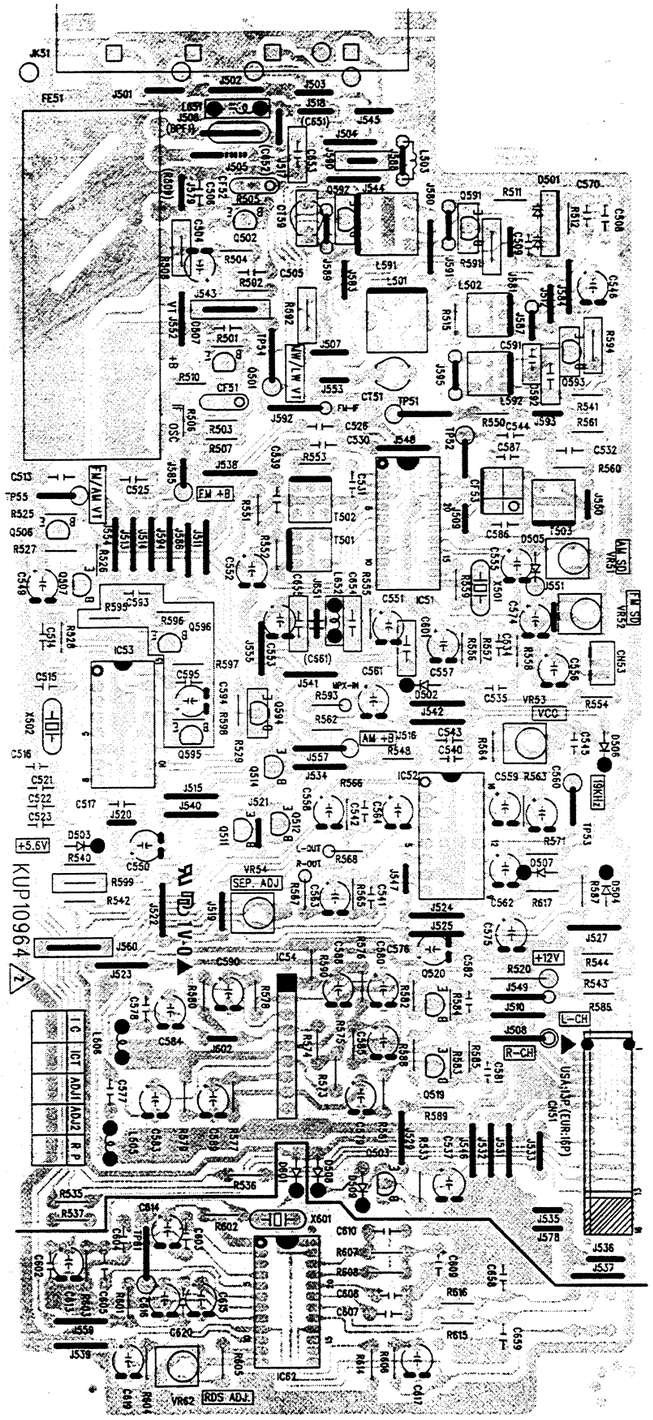


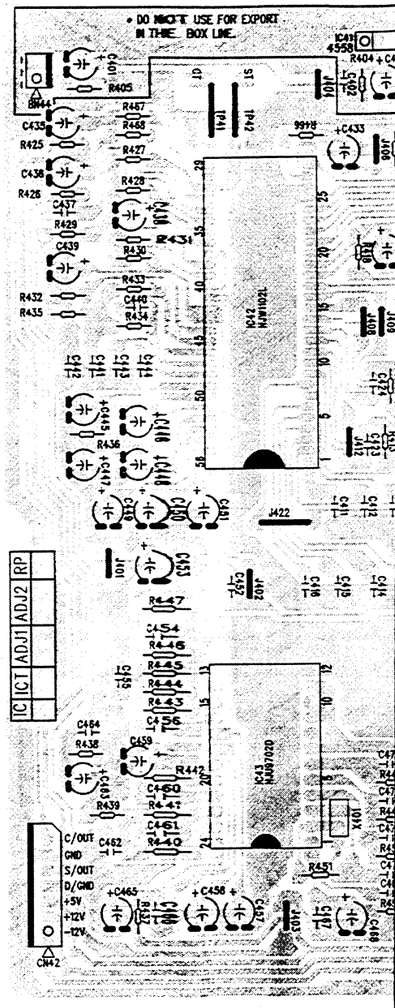
KUP11018Z

INPUT PCB

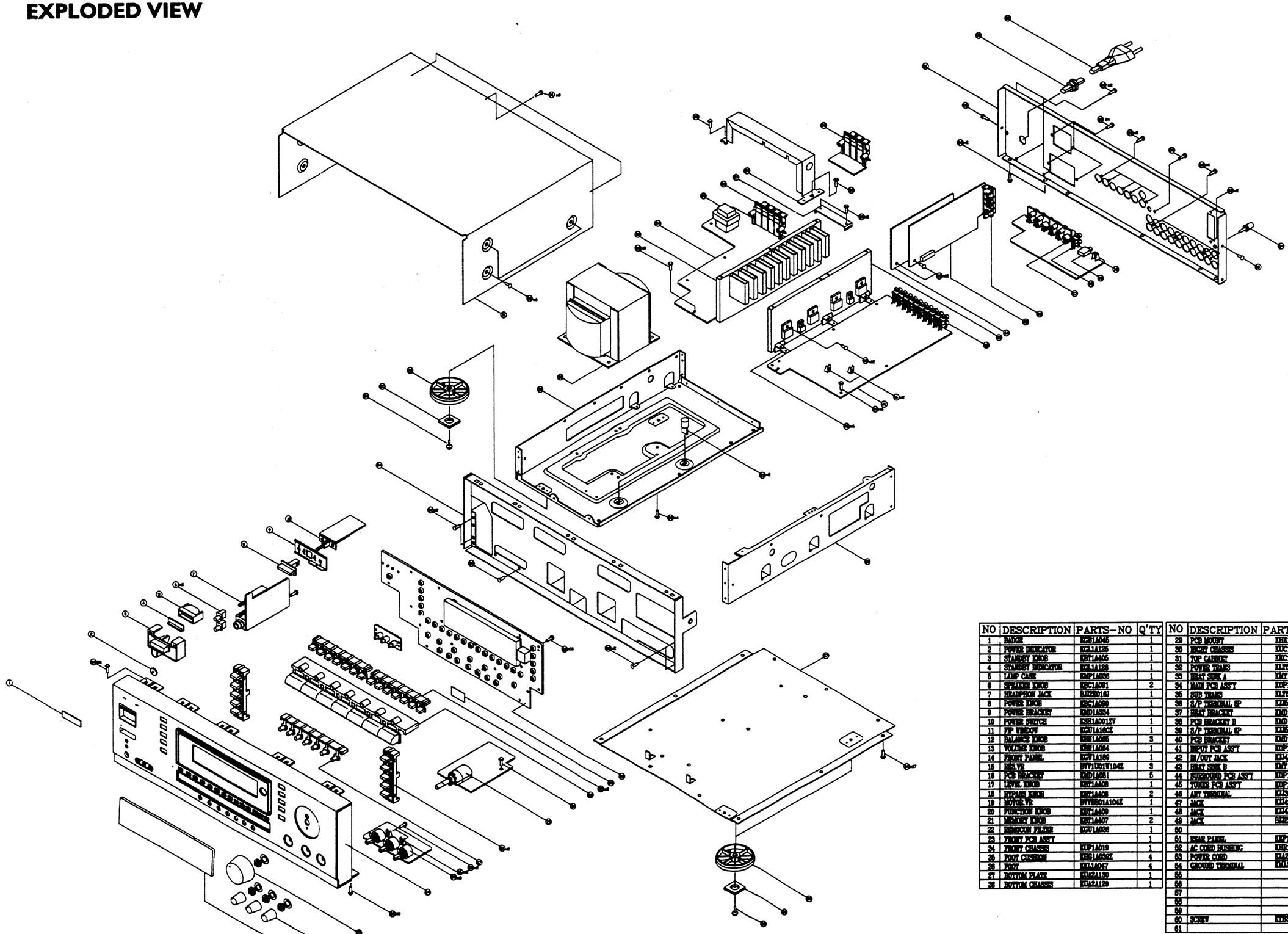

KUP1096 3A
JUMPER OPTION
EXPORT
DOMESTIC
CERAMIC CAP OPTION
C39~C49:EUROPE ONLY
PHONO JAMP
IC1 4558L
IC2 7313AL
CENTER AMP
SURROUND AMP
IC ICT ADJ1 ADJ2 RP
RZ-5100AV
RZ-5110AV
RZ-5200AV
AV-5100
AVC-V280DPL
ARV-2000G
INPUT PCB
Anam Elec.Co.Ltd.
96.06.24 B.M.KWAG
CN5 OPTION
RECEIVER
WITH RDS-PIN1~PIN16
NO RDS -PIN1~PIN13
AV-AMP -PIN1~PIN6
CN92
DATA
SCK
REQ
STB
PLL CE
CN91
RDS CLK
RDS DATA
SCK
STEREO IN
MUTE
MONO
TUNED
*AV-5100AV
N.C.
RDS MUTE
TUNED
MONO
MUTE
STEREO-IN
CLOCK
PLL CE
DATA
RDS DATA
CLOCK
PROTECT
MUTE(20dB)
D-GND
+5V
MUTE
R-IN
GND
+12V
AV2 P/B(R)
AV2 IN(R)
GND
AV2 IN(L)
AV2 P/B(L)
S/OUT
S.G
C.G
C/OUT
+12V(SW)
+12V
-12V
C.G
S.G
GND
-50V(SW)
+50V(SW)
-50V
+50V
REQ
CLOCK
DATA
Q121 B7780
Q120 D9980
Q119 D9980
Q100 1585L
Q126 1585L
TAPE1 P/B R/O
TAPE2 P/B R/O
CD R/O
VCR1 P/B R/O
VCR2 P/B R/O
JK1
JK2
JK3
JK4

TUNER PCB


KUP1066/2
FM/AM VT
FM +B
AM +B
SEP. ADJ
RDS ADJ
VCC
+12V
+5.5V
L-CH
R-CH
IC
ICT
ADJ1
ADJ2
R
P


• DO NOT USE FOR EXPORT IN THIS BOX LINE.
IC
ICT
ADJ1
ADJ2
RP
C/OUT
GND
S/OUT
D/GND
+5V
+12V
-12V

EXPLODED VIEW



NO	DESCRIPTION	PARTS-NO	Q'TY
1	RADIO	KHE1A045	1
2	POWER INDICATOR	KEL1A125	1
3	STANDBY KNOB	KNT1A405	1
4	STANDBY INDICATOR	KEL1A126	1
5	LAMP CASE	KMP1A036	1
6	SPEAKER KNOB	KNC1A091	2
7	HEADPHON JACK	BJE2D16J	1
8	POWER KNOB	KNC1A090	1
9	POWER BRACKET	KMD1AS54	1
10	POWER SWITCH	KSE1A0012V	1
11	FIP WINDOW	KPU1A160Z	1
12	BALANCE KNOB	KNS1A095	3
13	VOLUME KNOB	KNS1A094	1
14	FRONT PANEL	KFP1A180	1
15	RSN VR	RVV1UD1V104Z	3
16	PCB BRACKET	KMD1A051	5
17	LEVEL KNOB	KNT1A408	1
18	BYPASS KNOB	KNT1A408	2
19	MOVIE VR	RVV1E01A104Z	1
20	FUNCTION KNOB	KNT1A409	1
21	MEMORY KNOB	KNT1A407	2
22	REMOCON FILTER	KPU1A026	1
23	FRONT PCB ASS'Y		1
24	FRONT CHASSIS	KHF1A019	1
25	FOOT CUSHION	KHE1AS56Z	4
26	FOOT	KXL1A047	4
27	BOTTOM PLATE	KHA2A130	1
28	BOTTOM CHASSIS	KHA2A129	1

NO	DESCRIPTION	PARTS-NO	Q'TY
29	PCB MOUNT	KHE1A023	2
30	RIGHT CHASSIS	KHC1A029	1
31	TOP CABINET	KHC1B074Z	1
32	POWER TRANS	KLT6U0052U	1
33	HEAT SINK A	KMT1A107	1
34	MAIN PCB ASS'Y	KDP10067B	1
35	SUB TRANS	KLT6J0222U	1
36	S/P TERMINAL 6P	KJS4Q0012-C	1
37	HEAT BRACKET	KMD1AS19	3
38	PCB BRACKET B	KMD1AS20	1
39	S/P TERMINAL 6P	KJS6D003Z	1
40	PCB BRACKET	KMD1AS18	6
41	INPUT PCB ASS'Y	KDP10065B	1
42	IN/OUT JACK	KJ4P0025-K	1
43	HEAT SINK B	KMT1A018	1
44	SUBWOOFER PCB ASS'Y	KDP10069B	1
45	TUNER PCB ASS'Y	KDP10064	1
46	ANT TERMINAL	KJS3D006Z	1
47	JACK	KJ4S006Z	1
48	JACK	KJ4S010Z	1
49	JACK	BJE2D005Z	1
50			
51	REAR PANEL	KHF1A122	1
52	AC CORD BUSHING	KHE129	1
53	POWER CORD	KJA2A013Z	1
54	GROUND TERMINAL	KMJ3A001	1
55			
56			
57			
58			
59			
60	SCREW	KMS4+10G	60
61			

PARTS LIST

ATTENTION

1. **When placing an order for parts, be sure to list the Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering.**
   If not, a part different from the one you ordered may be delivered.
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
3. How to read the Parts List.

■ Resistor and Capacitor

Notes : · Part numbers are indicated for most mechanical parts.
Please use this part number for parts order.
· IMPORTANT SAFETY NOTICE.
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.
· The unit of resistance is OHM(Ω)
K=1000(Ω), M=1000(KΩ)
· The unit of capacitance is MICROFARAD(μF).
· P=10⁻⁶μF

■ Numbering System of Resistor

Example

KRD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value

Resistor Type	Wattage	Tolerance
KRD:Carbon	20:1/5W	F:=±1%
KRG:Metal Oxide	25:1/4W	J:=±5%
	50:1/2W	K:=±10%
	1:1W	
KRF:Metal Cement	2:2W	
	3:3W	

■ Numbering System of Capacitor

Example

KCKR	1H	101	K	B
Type	Voltage	Value	Tolerance	Peculiarity

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
KCB:Ceramic	OJ:6.3V	1H:50V DC	C:±0.25pF
KCC:Ceramic	1A:10V	1:125V DC	G:±2%
KCK:Ceramic	1C:16V	KC:400V AC	J:±5%
KCFR:Semiconductor	1E:25V		K:±10%
KCQI:Polyester	1H:50V		Z:+80%, -20%
KCQP:Polypropylene	1V:35V		
KCQS:Polystyrol			

WARNING

⚠ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

■ ELECTRICAL PARTS LIST

P.C BOARD BLOCK PART No.

PART No.	DESCRIPTION
1. KOP11018	FRONT PCB ASS'Y
2. KOP10963	INPUT PCB ASS'Y
3. KOP10964	TUNER PCB ASS'Y
4. KOP10965	SURROUND PCB ASS'Y
5. KOP10967	MAIN PCB ASS'Y

FRONT PCB BLOCK CONSISTS FOLLOWING P.C.B.
- u-COM P.C. BOARD
- SP SWITCH P.C. BOARD
- TONE CONTROL P.C. BOARD
- MASTER VR P.C. BOARD
- AV 2 INPUT P.C. BOARD
- POWER SWITCH P.C. BOARD

INPUT PCB BLOCK CONSISTS FOLLOWING P.C.B.
- INPUT & C/S AMP P.C. BOARD

TUNER PCB BLOCK CONSISTS FOLLOWING P.C.B.
- TUNER AMP P.C. BOARD

SURROUND PCB BLOCK CONSISTS FOLLOWING P.C.B.
- SURROUND P.C. BOARD

MAIN PCB BLOCK CONSISTS FOLLOWING P.C.B.
- POWER & L/R AMP P.C. BOARD
- VIDEO CONTROL P.C. BOARD
- POWER SUPPLY P.C. BOARD
- C/S SPEAKER P.C. BOARD

1. FRONT PCB

REF.No.	PART No.	DESCRIPTION
IC31,IC32	BVINJM4558L	I.C , OP AMP
IC35	KVIKIA6259S	I.C , OP AMP
IC91	BVIANAM1174M	I.C , u-COM
IC92	BRVPIC12043	I.C , SENSOR
IC93	BVIRE5VA30CC	I.C , RESET
Q341,Q342	KVTKSD1021YT	T.R
Q343,Q344	KVTKSB811YT	T.R
Q901	KVTKSB811YT	T.R
Q902	KVT2SC1740SRT	T.R
Q904,Q905	KVTDTA114YST	T.R
Q908	KVTDTA114YST	T.R
Q909,Q910	KVTDTC114YST	T.R
Q911,Q912	KVTDTC114YST	T.R
D301	KVDDL22VR	L.E.D , RED
D901~D905	KVD1N4148MT	DIODE
D906	KVD342VCF02T085	L.E.D , RED
D907,D908	BVDLNJ301MPUJA	L.E.D , GREEN
D909	KVD1N4148T	DIODE
BN24	KWZRZ5100AV24	WIRE ASS'Y
BN25	KWZRZ5100AV25	WIRE ASS'Y
BN26	KWZRZ5100AV26	WIRE ASS'Y
BN32	KWZRZ5100AV32	WIRE ASS'Y
BN34	KWZRZ5100AV34	WIRE ASS'Y
BN36	KWZRZ5100AV36	WIRE ASS'Y
BN37	KWZRZ5100AV37	WIRE ASS'Y
BN42	KWZRZ5100AV42	WIRE ASS'Y
BN81	KWZRZ5100AV81	WIRE ASS'Y
BN89	KWZAAV29DPL01	WIRE ASS'Y
BN91	KWZRZ5100AV91	WIRE ASS'Y
BN92	KWZRZ5100AV92	WIRE ASS'Y
BN93	KWZRZ5100AV93	WIRE ASS'Y
BN94	KWZRZ5100AV94	WIRE ASS'Y
CN31	KJP03GA09ZG	WAFER
CN32	KJP07GA01ZM	WAFER
CN35	KJP03GA01ZM	WAFER
CN36	KJP04GA01ZM	WAFER
CN37	KJP02GA01ZM	WAFER
CN82	KJP04GA01ZM	WAFER
CN87	KJP02KA060ZY	WAFER
C901	BCES5R5V104	CAP , GOLD
C902	KCEA0JH102B	CAP , ELECT
C925	BCKWKC472MF	CAP , CERAMIC
FIP1	KFLSVA15MM03	F.I.P.
JB21	KJJ4M017Z	JACK , VCR
JB22	KJJ4M018Z	JACK , VCR
JB23	KJJ4M019Z	JACK , VCR
JK71	BJJ2E019Z	JACK , HEADPHONE
L901	KLQ02C100KT	COIL
S901~S939	BST1A014ZT	SW , TACT
SW71,SW72	KSH2B017Z	SW , PUSH
SW81	KSH1A001ZV	SW , PUSH
VR31,VR32	BVV2W01C104Z	RES , VARIABLE
VR33	BVV1T01W104Z	RES , VARIABLE
VR34	BVVBB01A104Z	RES , VARIABLE
X901	KOX08000E160C	CRYSTAL
Z901	KRGSN7X104J	RES , NETWORK
Z902	KRGSN6X104J	RES , NETWORK

2. INPUT PCB

REF.No.	PART No.	DESCRIPTION
IC1	BVINJM4558L	I.C , OP AMP
IC2	BVINJU7313L	I.C , FUNC. SEL.
IC3	BVINJU7311L	I.C , FUNC. SEL.
IC4	BVINJM4558L	I.C , OP AMP
Q1,Q2	KVTKTC2878BT	T.R
Q101,Q102	KVTKTC2878BT	T.R
Q103,Q104	KVTKTC2878BT	T.R
Q105,Q106	KVTKSA992FT	T.R

REF.No.	PART No.	DESCRIPTION
Q109,Q110	BVT2SD1585L	T.R
Q111,Q112	KVTKSC2785YT	T.R
Q113,Q114	KVTKSC2785YT	T.R
Q115,Q116	KVTKSC2316YT	T.R
Q117,Q118	KVTKSA916YT	T.R
Q119,Q120	KVTKTD998O	T.R
Q121,Q122	KVTKSD778O	T.R
Q123,Q124	KVTKSC2785YT	T.R
Q125	KVTDTA114YST	T.R
Q126,Q127	KVTKSC2785YT	T.R
Q128	KVTKSA733CYT	T.R
Q130	KVTKSC2785YT	T.R
Q131,Q132	KVTDTC114TST	T.R
D101	KVDMTZJ15BT	DIODE , ZENER
D102	KVDUZ15BMT	DIODE , ZENER
D103,D104	KVD1N4148MT	DIODE
D106~D108	KVD1N4148MT	DIODE
BN21	KWZRZ5100AV21	WIRE ASS'Y
BN27	KWZRZ5100AV27	WIRE ASS'Y
BN31	KWZRZ5100AV31	WIRE ASS'Y
BN35	KWZRZ5100AV35	WIRE ASS'Y
BN71	KWZRZ5100AV71	WIRE ASS'Y
CN25	KJP05GA09ZG	WAFER
CN41	KJP03GA63ZY	WAFER
CN43	KJP10GA63ZY	WAFER
CN51	KJP16GA52ZG	WAFER
CN72	KJP10GA01ZM	WAFER
CN91	KJP08GA01ZM	WAFER
CN92	KJP05GA01ZM	WAFER
L101,102	KLEYK1R8KA	COIL
R137,R138	KRG1ANJ181H	RES , METAL OXIDE FILM
R143~R146	KRF3CJR27H	RES , CEMENT
R151,R152	KRG1ANJ4R7H	RES , METAL OXIDE FILM
R155,R156	KRG1ANJ100H	RES , METAL OXIDE FILM
	KJJ4P014Z	JACK , IN/OUT
	KJJ4R012Z	TERMINAL , IN/OUT
	3. TUNER P.C.B	
IC51	BVILA1266	I.C , FM IF & AM RF,IF
IC52	BVILA3361	I.C , MPX
IC53	BVILM7001	I.C , PLL
IC54	KVIMC4558S	I.C , OP AMP
IC62	BVILA2232	I.C , RDS
Q501,Q502	KVTKTC31920T	T.R
Q503	KVTDTA114YST	T.R
Q506,Q507	KVT2SC1740SRT	T.R
Q511,Q512	KVTDTA114YST	T.R
Q514	KVTDTC114TST	T.R
Q519,Q520	KVT2SC1740SRT	T.R
D501	KVDKV1236Z	DIODE , VARICAP
D502~D509	KVD1N4148MT	DIODE
D601	KVD1N4148MT	DIODE
BPF1	BRVBPM88	B.P.F
CB51	KJP16HB53ZG	WAFER , HOUSING
CF51,CF52	BVFE107MSH-A	FILTER , CERAMIC
CF53	BVFSFZ450F	FILTER , CERAMIC
CT51	KCRA020S12	CAP , VARIABLE
FE51	KNVFTA3508H	PACK , TUNER
FE51	KNVFTA4460H	PACK , TUNER
JK51	KJJ3S006Z	TERMINAL , ANT
JK51	KJJ3S007Z	TERMINAL , ANT
JW51	KWE820270AA	WIRE ASS'Y
JW52	KWZNT20001	WIRE ASS'Y
L501	KLA2C005	COIL , AM ANT2
L502	KLO2B008Z	COIL , AM OSC
L505,L506	KLQB542KLZ	COIL
L651	KLA4Y106Z	COIL , FILTER
L652	KLQA183KW	COIL
T501	KLI3B020-G	I.F.T , FM
T502	KLI3B021-G	I.F.T , FM
T503	KLI2B105-G	I.F.T , FM
VR51,VR52	BVN1PA203B01T	RES , SEMI FIXED
VR53,VR54	BVN1PA103B01T	RES , SEMI FIXED
VR62	BVN1PA502B01T	RES , SEMI FIXED
X501	BVFBFU450C4N	FILTER , CERAMIC
X502	KOX07200A200C	CRYSTAL
X601	BVFCSB456F33	RESONATOR , CERAMIC
	4. SURROUND P.C.B	
IC42	BVINJW1102L	I.C , PRO LOGIC
IC43	BVINJU9702D	I.C , DELAY
CB41	KJP03HB60ZY	HOUSING
CB43	KJP10HB60ZY	HOUSING
X401	BVFKBR-1000H	RESONATOR , CERAMIC
	5. MAIN P.C.B	
IC27	KVIGD4066B	I.C , SWITCHING
IC81	KVIMC7812C	I.C , REGULATOR
IC82	KVIMC7912C	I.C , REGULATOR
IC83,IC84	KVIMC7805C	I.C , REGULATOR
Q261~Q266	KVTKSA733CYT	T.R
Q701~Q704	KVTKSA992FT	T.R
Q705~Q708	KVTKSC2785YT	T.R
Q709,Q710	BVT2SD1585L	T.R
Q711,Q712	KVTKSC2690A	T.R
Q713,Q714	KVTKSA1220A	T.R
Q715,Q716	BVT2SC4467	T.R
Q717,Q718	BVT2SA1694	T.R

REF.No.	PART No.	DESCRIPTION
Q719~Q722	KVTKTC2878BT	T.R
Q723,Q724	KVTKSC2785YT	T.R
Q725	KVTKSA1175YT	T.R
Q726~Q729	KVTKSC2785YT	T.R
Q730	KVTKSR2206T	T.R
Q801	KVTKTD288Y	T.R
Q802	KVTKSA1175YT	T.R
Q803	KVTKSC2785YT	T.R
Q804	KVTKSA614Y	T.R
Q805	KVTKSC2785YT	T.R
Q806	KVTKSA1175YT	T.R
Q807	KVTKSA614Y	T.R
Q808	KVTKSC2785YT	T.R
Q809	KVTKTA1271YT	T.R
Q810,Q811	KVTKTC3203YT	T.R
Q812	KVTDTA114YST	T.R
Q813	KVTKSC945CYT	T.R
Q814	KVTKSA733CYT	T.R
D8,D9	KVD1N4148MT	DIODE
D701,D702	KVDUZ15BMT	DIODE , ZENER
D705~D707	KVDIN4148T	DIODE
D708~D710	KVDIN4148MT	DIODE
D801	BVDPBPC803F	DIODE , BRIDGE
D811~D813	KVD1N4003ST	DIODE , RECT
D814	KVDUZ6.2BMT	DIODE , ZENER
D815	KVDUZ33BMT	DIODE , ZENER
D816~D818	KVD1N4148MT	DIODE
D819~D822	KVD1N4003ST	DIODE , RECT
D823	KVD1N4148MT	DIODE
BN72	KWZRZ5100AV72	WIRE ASS'Y
BN82	KWZRZ5100AV82	WIRE ASS'Y
BN83	KWZRZ5100AV83	WIRE ASS'Y
BN84	KWZRZ5100AV84	WIRE ASS'Y
CN21	KJP04GA01ZM	WIRE ASS'Y
CN24	KJP03GA09ZG	WAFER
CN26	KJP03GA01ZM	WAFER
CN27	KJP02GA01ZM	WAFER
CN34	KJP03GA01ZM	WAFER
CN71	KJP05GA09ZG	WAFER
CN81	KJP04GA01ZM	WAFER
CN83	KJP05GB03ZM	WAFER
CN84	KJP06GB03ZM	WAFER
CN88	KJP02KA060ZY	WAFER
CN93	KJP05GA09ZG	WAFER
CN94	KJP05GA01ZM	WAFER
C801,C802	KCETS63V822U	CAP , ELECT
C803,C804	KCEA1EH471E	CAP , ELECT
C825	KCEA0JH102B	CAP , ELECT
C830	KCEA1EH102E	CAP , ELECT
JW85	KWED202100PP	WIRE
JW87	KWZRZ5100AV87	WIRE ASS'Y
L701,L702	KLEYK1R8KA	COIL
RY81	KSL1A007ZE	RELAY
RY82	KSL4B003ZW	RELAY
R283~R285	KRG1ANJ151H	RES, METAL OXIDE FILM
R286	KRG1ANJ100H	RES, METAL OXIDE FILM
R733,R734	KRG1ANJ181H	RES, METAL OXIDE FILM
R735~R738	KRF3CJR27H	RES , CEMENT
R745,R746	KRG1ANJ4R7H	RES, METAL OXIDE FILM
R747,R748	KRG1ANJ100H	RES, METAL OXIDE FILM
R801,R802	KRD50FJ123T	RES , CARBON
R805,R806	KRQ1CJR47	RES , FUSE
R807,R808	KRG1ANJ4R7H	RES,METAL OXIDE FILM
R832	KRD50TJ335T	RES , CARBON
R833	KRQ1CJ100	RES , FUSE
R834	KRG1ANJ100H	RES, METAL OXIDE FILM
	BJJ2D003Z	JACK , STEREO
	KJJ4N012Z	JACK , BOARD
	KJJ4S005Z	JACK , VCR
	KJJ5Q001Z-C	TERMINAL, SPEAKER 8P
	KJJ5R004Z	TERMINAL , SPEAKER
	KLT5J022ZE	TRANS , SUB
	6. MISCELLANEOUS	
	KSA1A008Z	AM LOOP ANT ASS'Y
	KSA1A0007	ANT , FM WIRE
	KLT5U005ZE	TRANS , MAIN
	KBA2C3150NRE	FUSE